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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,082	09/18/2000	Robert E. Vaughan	PD-990202	3795

20991 7590 12/19/2003

HUGHES ELECTRONICS CORPORATION  
PATENT DOCKET ADMINISTRATION RE/R11/A109  
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EXAMINER

DUONG, FRANK

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 12/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/664,082

Applicant(s)

VAUGHAN ET AL.

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. This Office Action is a response to the communication dated 09/18/2000. Claims 1-17 are pending in the application.

### ***Drawings***

2. The drawings are objected to because of the following informalities:

FIG. 2, block 22, "TCM Switch" should read --TDM Switch-- for consistent with that disclosed in the specification.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 13-16 are objected to because of the following informalities:

As per claims 13-16, "claim 1" should read --claim 12--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Dent (USP 5,555,257).

Regarding **claim 1**, in accordance with Dent reference entirety, Dent discloses a multimode transmission system (FIG. 6) using TDMA comprising:

a TDM switch (FIG. 16; block 1601) coupled to a data signal (1600; CALLING CHANNEL DATA; and TIMING CONTROL) (col. 14, lines 40-53), said data signal comprising a plurality of satellite services (1600; CALLING CHANNEL DATA; and TIMING CONTROL), said TDM switch multiplexing said data signal into a TDMA signal (output of block 1601) comprising a plurality of TDMA transmission frames, each TDMA transmission frame having a plurality of downlink frame time slots, wherein each of said downlink frame time slots is dynamically allocated to one of said plurality of satellite services (*col. 18, lines 3-21*);

a modulator (1602) coupled to said TDM switch (1601) and receiving said TDMA signal, said modulator modulating said TDMA signal to generate a modulated TDMA signal (output of 1602) (*col. 18, lines 21-26*); and

a beam-shaping, power-controlling, transmit antenna (1603 and antenna (not shown; inherent) or FIG. 18; 1800) coupled to said demodulator and broadcasting said modulated TDMA signal using at least one downlink beam, said at least one downlink beam having a shape and number determined by said data signal (col. 9, lines 60-65, and col. 18, lines 40-57 and col. 23, line 48 to col. 24, line 5 and col. 29, lines 4-5).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein one of said plurality of services

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comprises a timing beacon synchronization data signal (*col. 14, lines 40-53 and col. 28, lines 26-28*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a multicast/broadcast data service (*col. 29, lines 4-10*).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Dent further discloses wherein said multicast/broadcast data service comprises a cell-cast function (*col. 29, lines 4-10*).

Regarding **claim 5**, in addition to features recited in base claim 4 (see rationales discussed above), Dent further discloses wherein said cell-cast function comprises multi-casting to individual downlink cells within an uplink cell (*col. 29, lines 4-10*).

Regarding **claim 6**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a calibration data signal (*col. 27, lines 41-52*).

Regarding **claim 7**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a point-to-point data service (*col. 12, lines 25-32*).

Regarding **claim 8**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein each of said plurality of downlink frame time slots is a fixed length of time (*col. 19, lines 5-6*).

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Regarding **claim 9**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein each of said plurality of downlink frame time slots is a variable length of time (*col. 19, lines 5-14*).

Regarding **claim 10**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein said at least one downlink beam has a variable power assigned to ensure link availability and bit-error-rate performance for a coverage area of said at least one downlink beam (*col. 23, lines 48-53*).

Regarding **claim 11**, in addition to features recited in base claim 1 (see rationales discussed above), Dent further discloses wherein a transmission information rate is altered to ensure link availability and bit-error-rate performance for a coverage area of said at least one downlink beam (*col. 44, lines 37-38 and thereafter*).

Regarding **claim 12**, in accordance with Dent reference entirety, Dent discloses a satellite system (FIG. 6) comprising:

- a ground station (400);

- a satellite (410) in orbit and in communication with said ground station (400) (see FIG. 6), said satellite having a multimode transmission system using TDMA comprising:

- a TDM switch (FIG. 16; block 1601) coupled to a data signal (1600; CALLING CHANNEL DATA; and TIMING CONTROL) (*col. 14, lines 40-53*), said data signal comprising a plurality of satellite services (1600; CALLING CHANNEL DATA; and TIMING CONTROL), said TDM switch multiplexing said data signal into a TDMA signal (output of block 1601) comprising a plurality of TDMA transmission frames, each TDMA

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transmission frame having a plurality of downlink frame time slots, wherein each of said downlink frame time slots is dynamically allocated to one of said plurality of satellite services (*col. 18, lines 3-21*);

a modulator (1602) coupled to said TDM switch (1601) and receiving said TDMA signal, said modulator modulating said TDMA signal to generate a modulated TDMA signal (output of 1602) (*col. 18, lines 21-26*); and

a beam-shaping, power-controlling, transmit antenna (1603 and antenna (not shown; inherent) or FIG. 18; 1800) coupled to said demodulator and broadcasting said modulated TDMA signal using at least one downlink beam, said at least one downlink beam having a shape and number determined by said data signal (*col. 9, lines 60-65, and col. 18, lines 40-57 and col. 23, line 48 to col. 24, line 5 and col. 29, lines 4-5*).

Regarding **claim 13**, in addition to features recited in base claim 12 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a timing beacon synchronization data signal (*col. 14, lines 40-53 and col. 28, lines 26-28*).

Regarding **claim 14**, in addition to features recited in base claim 12 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a multicast/broadcast data service (*col. 29, lines 4-10*).

Regarding **claim 15**, in addition to features recited in base claim 12 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a calibration data signal (*col. 27, lines 41-52*).

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Regarding **claim 16**, in addition to features recited in base claim 12 (see rationales discussed above), Dent further discloses wherein one of said plurality of services comprises a point-to-point data service (*col. 12, lines 25-32*).

Regarding **claim 17**, in accordance with Dent reference entirety, Dent discloses a method for satellite system (FIG. 6) comprising the steps of:

generating a data signal comprising plurality of data services (1600; CALLING CHANNEL DATA; and TIMING CONTROL);

generating a timing signal (TIMING CONTROL);

multiplexing said data signal to generate a TDMA signal (output of block 1601) having a plurality of downlink frame each downlink frame having a plurality of downlink frame slots, wherein each of said downlink frame time slots is dynamically allocated to one of said plurality of satellite services (*col. 18, lines 3-21*);

modulating said TDMA signal to generate a modulated TDMA signal (output of 1602) (*col. 18, lines 21-26*);

broadcasting said modulated TDMA signal using at least one downlink beam, said at least one downlink beam having a shape and number determined by said data signal (*col. 9, lines 60-65, and col. 18, lines 40-57 and col. 23, line 48 to col. 24, line 5 and col. 29, lines 4-5*).

### **Conclusion**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



Acampora et al (USP 4,315,262).

Acampora et al (4,730,310).

Rosen (USP 4,819,227).

Assal et al (USP 4,931,802).

Petterson et al (USP 5,763,959).

Anselmo et al (USP 6,125,261).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Frank Duong  
December 12, 2003